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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,743	12/20/2001	David M. Weber	01-647	3790

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EXAMINER	
FRANKLIN, RICHARD B	

ART UNIT	PAPER NUMEER
2181	

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/027,743	WEBER ET AL.	
	Examiner	Art Unit	
	Richard Franklin	2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6-9,11-13 and 15-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6-9,11-13 and 15-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

FRITZ FLEMING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100
8/7/2006

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 3 – 5, 6 – 9, and 11 – 12 have been examined.

Allowable Subject Matter

2. The indicated allowability of claims 1, 3 – 5, 6 – 9, and 11 – 12 is withdrawn in view of the newly discovered reference(s) to Lay et al. (US Patent No. 6,862,293) and Si et al. (US Patent No. 7,010,612). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 4, 6 – 9, 11 – 12, and 19 – 20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims provide a method for only "*data transformation*" without any "real world" or tangible result. Furthermore, the language of the claims raises a question as to whether or not the claims are directed merely to an abstract idea which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

In order to overcome the 35 U.S.C. 101 rejection, the claim must "*do something*" with the aggregated or converted data stream. For example, transferring data or storing the data in a component has been deemed to cover tangible subject matter.

Claim Rejections - 35 USC § 112 - 1st Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 13, 15 – 17, and 18 – 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The written description does not describe what a "multiple-thread, multiple-speed protocol method" is.

5. Claims 13, 15 – 17, and 18 – 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification has not shown how the claimed circuitry is enabled to process the "multiple-thread, multiple-speed protocol method."

Claim Rejections - 35 USC § 112 – 2nd Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 13, 15 – 17, and 18 – 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what a "multiple-thread, multiple-speed protocol method" is, as neither the specification nor claims have defined or given any examples of the term. Also, it is noted that a "multiple-thread, multiple-speed protocol method" is not a requirement of the claims, and only presents a choice as to which two of the three presented protocol methods may be used.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 3 – 4, 6 – 9, and 11 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 4,939,735 (hereinafter Fredericks) in view of US Patent No 6,862,293 (hereinafter Lay).

As per claim 1 Fredericks teaches an apparatus, comprising a single die (Fredericks; Figure 2 Item 17); a first circuitry disposed on said single die including: a

deserializer for converting at least one serial differential bit stream into a character stream (Fredericks; Figure 2 Item 90B); a decoder receiving said character stream to form a decoded data stream (Fredericks; Figure 2 Item 100B); and a means for aggregating said decoded data stream and reconstructing a parallel word according to a desired protocol definition (Fredericks; Figure 2, Col 2 Line 61 – Col 3 Line 36); a second circuitry disposed on said single die including: a means for presenting a second parallel word according to said desired protocol definition to form an altered data stream (Fredericks; Figure 2 Item 40A, Col 2 Line 61 – Col 3 Line 36), an encoder receiving said altered data stream to form an encoded data stream (Fredericks; Figure 2 Item 50A); a serializer for converting said encoded data stream into said at least one serial differential bit stream (Fredericks; Figure 2 Item 60A).

Fredericks does not teach wherein the first and second circuitry are capable of implementing at least two interconnect protocol definitions, the at least two interconnect protocol definitions including a single-thread, multiple-speed protocol method and a multiple-thread, single-speed protocol method.

However, Lay teaches a high speed link that is capable of implementing at least two interconnect protocol definitions, the at least two interconnect protocol definitions including a single-thread, multiple speed protocol method (Lay; Col 7 Lines 29 – 31 "1 Gb/s link or a 2 Gb/2 link") and a multiple-thread, single-speed protocol method (Lay; Col 7 Lines 29 – 31 "10 Gb/s link").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Fredericks to include the

multiple protocol methods because doing so allows for existing hardware to support a data rate increase to ten gigabits per second (Lay; Col 2 Lines 15 – 21).

As per claims 3, 6, and 11, Lay also teaches wherein the at least two interconnect protocol definitions include 10 Gigabit Fibre Channel protocol definition (Lay; Col 7 Lines 29 – 31) and a 2 Gigabit and 1 Gigabit Fibre Channel protocol definition (Lay; Col 7 Lines 29 – 31).

As per claim 4, Fredericks teaches a method comprising converting a at least one serial data stream to a character stream (Fredericks; Figure 2 Item 90B); decoding of said character stream to form a decoded data stream (Fredericks; Figure 2 Item 1008); and aggregating said decoded data stream according to a desired interconnect protocol definition (Fredericks; Figure 2, Col 2 Line 61 – Col 3 Line 36).

Fredericks does not teach wherein the circuitry is capable of transforming at least one serial bit stream into a word in accordance with at least two interconnect protocol definitions, the at least two interconnect protocol definitions including a single-thread, multiple-speed protocol method and a multiple-thread, single-speed protocol method.

However, Lay teaches a high speed link that is capable of implementing at least two interconnect protocol definitions, the at least two interconnect protocol definitions including a single-thread, multiple speed protocol method (Lay; Col 7 Lines 29 – 31 "1 Gb/s link or a 2 Gb/2 link") and a multiple-thread, single-speed protocol method (Lay; Col 7 Lines 29 – 31 "10 Gb/s link").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Fredericks to include the multiple protocol methods because doing so allows for existing hardware to support a data rate increase to ten gigabits per second (Lay; Col 2 Lines 15 – 21).

As per claims 7 and 12, Lay also teaches wherein decoding of the at least one serial data streams converts 10 bits of data to 8 bits of data (Lay; Col 7 Lines 12 – 14).

As per claim 8, Fredericks also teaches wherein aggregating of said decoded data stream aligns said decoded data stream to reconstruct said parallel data word according to said desired interconnect protocol definition (Fredericks; Figure 2, Col 3 Lines 31 – 32).

As per claim 9, Fredericks also teaches a method comprising selecting a word stream for transmission (Fredericks; Figure 2 Item 20); presenting said word stream according to a desired interconnect protocol definition to form an altered data stream (Fredericks; Figure 2 Item 90B or 20); encoding said altered data stream to form an encoded data stream (Fredericks; Figure 2 Item 50A); and converting said encoded data stream to at least one serial differential bit stream (Fredericks; Figure 2 Item 60A);

Fredericks does not teach wherein the circuitry is capable of transforming at least one serial differential bit stream into a word in accordance with at least two interconnect protocol definitions, the at least two interconnect protocol definitions including a single-

thread, multiple-speed protocol method and a multiple-thread, single-speed protocol method.

However, Lay teaches a high speed link that is capable of implementing at least two interconnect protocol definitions, the at least two interconnect protocol definitions including a single-thread, multiple speed protocol method (Lay; Col 7 Lines 29 – 31 "1 Gb/s link or a 2 Gb/2 link") and a multiple-thread, single-speed protocol method (Lay; Col 7 Lines 29 – 31 "10 Gb/s link").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Fredericks to include the multiple protocol methods because doing so allows for existing hardware to support a data rate increase to ten gigabits per second (Lay; Col 2 Lines 15 – 21).

8. Claims 13, and 15 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 4,939,735 (hereinafter Fredericks) in view of US Patent No. 7,010,612 (hereinafter Si) and further in view of US Patent No 6,862,293 (hereinafter Lay).

As per claim 13, Fredericks teaches an apparatus comprising a single die (Fredericks; Figure 2 Item 17); means for transforming at least one serial differential bit stream into a parallel word (Fredericks; Figure 2 Item 20); said transforming means being disposed on said single die (Fredericks; Figure 2); means for converting a second parallel word into at least one serial differential bit stream (Fredericks; Figure 2 Item 16); and said converting means being disposed on said single die (Fredericks; Figure 2).

Fredericks does not teach the converting means including an input selector in which the apparatus operates according to a selected protocol definition; wherein the transforming means and converting means are capable of implementing at least two interconnect protocol definitions, the at least two interconnect protocol definitions including a single-thread, multiple-speed protocol method, and a multiple-thread, single-speed protocol method.

However, Si teaches a universal serializer/deserializer wherein the converting means includes an input selector in which the apparatus operates according to a selected protocol definition (Si; Col 3 Lines 48 – 50); capable of transforming at least one serial differential bit stream into a word in accordance with at least two interconnect protocol definitions (Si; Col 1 Lines 49 – 56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Fredericks to include the multiple protocol methods because doing so allows for the device to be adapted, after manufacture, to communication in a protocol of choice (Si; Col 3 Lines 27 – 34).

Fredericks in combination with Si does not explicitly teach wherein the at least two interconnect protocol definitions including a single-thread, multiple-speed protocol method and a multiple-thread, single-speed protocol method.

However, Lay teaches a high speed link that is capable of implementing at least two interconnect protocol definitions, the at least two interconnect protocol definitions including a single-thread, multiple speed protocol method (Lay; Col 7 Lines 29 – 31 “1

Gb/s link or a 2 Gb/2 link") and a multiple-thread, single-speed protocol method (Lay; Col 7 Lines 29 – 31 "10 Gb/s link").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Fredericks in combination with Si to include the multiple protocol methods because doing so allows for existing hardware to support a data rate increase to ten gigabits per second (Lay; Col 2 Lines 15 – 21).

As per claim 15, Lay also teaches wherein the at least two interconnect protocol definitions include 10 Gigabit Fibre Channel protocol definition (Lay; Col 7 Lines 29 – 31) and a 2 Gigabit and 1 Gigabit Fibre Channel protocol definition (Lay; Col 7 Lines 29 – 31).

As per claims 16 and 17, Si also teaches wherein transforming means includes a deserializer (Si; Figure 2 Item 250), a decoder (Si; Figure 3 Item 318), and an aggregator (Si; Figure 2 Item 204) capable of implementing at least two interconnect protocol definitions and converting means includes a data presenter (Si; Figure 6 Item 612), an encoder (Si; Figure 6 Item 616), and a serializer (Si; Figure 6 Item 600) capable of implementing at least two interconnect protocol definitions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Franklin whose telephone number is (571) 272-0669. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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